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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,333	02/19/2002	Hitoshi Yamada	1082.1042	2004
21171	7590	02/23/2004	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			DONG, DALEI	
			ART UNIT	PAPER NUMBER
			2875	

DATE MAILED: 02/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/076,333	Applicant(s) YAMADA ET AL.	
	Examiner Dalei Dong	Art Unit 2875	

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2003.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 12-21 is/are pending in the application.
 4a) Of the above claim(s) 4-10 and 12-21 is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-3 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 19 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 10/076,333.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Examiner respectfully withdrew the election/restriction issued January 11, 2004, because newly submitted claims 4-10 and 12-21 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The inventions are distinct, each from the other because of the following reasons:

Inventions of Group I and Group II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the product of a gas discharge tube can be manufacturing by a different process such as the process recited by U.S. Patent No. 4,437,845 to Schleimann-Jensen. Invention of Group II is classified in a different class and subclass, therefore provides extra burden upon the Examiner and thus restriction is proper. Also, because the method of making and the product of a discharge tube are distinct invention as acquired a separate status in the art as shown by their different classification, restriction for examiner purposes as indicated is proper.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 4-10 and 12-21 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-3 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 31, 37 and 39 of U.S. Patent No. 6,577,060 to Tokai in view of U.S. Patent No. 5,514,934 to Matsumoto. Tokai reference discloses the claimed invention except for at least two discharge electrode, it is inherent that the discharge tube of Tokai to have at least two electrode in order to accomplish the gas discharge, further it is old and well known in the art as disclosed by the Applicant to have at least two electrode outside of the discharge tube as shown by U.S. Patent No. 5,514,934 to Matsumoto. Therefore, it would have been obvious to one having ordinary skill in the art to provide at least two electrodes on the outer surface of the discharge tube.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,514,934 to Matsumoto in view of U.S. Patent No. 6,612,889 to Green.

Regarding to claims 1-2, Matsumoto discloses in Figure 1, "a fluorescent lamp 1, a glass bulb 2 has a straight cylinder form having dimensions of, for example, a diameter of 10 mm and a length of 220 mm, and a fluorescent substance layer 3 is formed on almost the entire internal surface of the glass bulb 2. A rare gas such as xenon at a pressure such as 70 Torr is enclosed in the glass bulb 2. A part having a width such as approximately 4 mm along the entire length of the glass bulb 2, on which the fluorescent substance layer 3 is not formed, constitutes a light output part 4 for emitting the light generated within the glass bulb 2 to the outside. A pair of external electrodes 5a and 5b having a width such as approximately 12 mm are mounted on the external peripheral surface of the glass bulb 2 along the entire length thereof except at the light output part 4 spaced apart by, for example, approximately 2 mm less than the width of the light output part 4 on the opposite side to the light output part 4. An insulating member 8 for preventing a dielectric breakdown between the electrodes 5a and 5b on the external peripheral surface of the lamp is formed on the external surface of the glass in the space between the external electrodes 5a and 5b. A power source 7 for supplying electric power is connected to the external electrodes 5a and 5b through lead wires 6a and 6b" (column 5, lines 45-67).

However, Matsumoto does not disclose an electron emission film formed on the entire inner surface of the tube and the electron emission film is made of magnesium oxide. Green teaches “to obtain an increase in luminosity and radiation transport efficiency, in an embodiment of the present invention, the shell 50 of each micro-component 40 is at least partially coated with a secondary emission enhancement material. Any low affinity material may be used including, but not limited to, magnesium oxide and thulium oxide. One skilled in the art would recognize that other materials will also provide secondary emission enhancement. In another embodiment of the present invention, the shell 50 is doped with a secondary emission enhancement material. It is contemplated that the doping of shell 50 with a secondary emission enhancement material may be in addition to coating the shell 50 with a secondary emission enhancement material. In this case, the secondary emission enhancement material used to coat the shell 50 and dope the shell 50 may be different” (column 9, line 62 to column 10, line 10).

Matsumoto also teaches in “in addition to, or in place of, doping the shell 50 with a secondary emission enhancement material, according to an embodiment of the present invention, the shell 50 is doped with a conductive material. Possible conductive materials include, but are not limited to silver, gold, platinum, and aluminum. Doping the shell 50 with a conductive material provides a direct conductive path to the gas or gas mixture contained in the shell and provides one possible means of achieving a DC light-emitting panel” (column 10, lines 11-19).

Matsumoto further teaches “in another embodiment of the present invention, the shell 50 of the micro-component 40 is coated with a reflective material. An index matching material that matches the index of refraction of the reflective material is disposed so as to be in contact with at least a portion of the reflective material. The reflective coating and index matching material may be separate from, or in conjunction with, the phosphor coating and secondary emission enhancement coating of previous embodiments. The reflective coating is applied to the shell 50 in order to enhance radiation transport. By also disposing an index-matching material so as to be in contact with at least a portion of the reflective coating, a predetermined wavelength range of radiation is allowed to escape through the reflective coating at the interface between the reflective coating and the index-matching material. By forcing the radiation out of a micro-component through the interface area between the reflective coating and the index-matching material greater micro-component efficiency is achieved with an increase in luminosity. In an embodiment, the index matching material is coated directly over at least a portion of the reflective coating. In another embodiment, the index matching material is disposed on a material layer, or the like, that is brought in contact with the micro-component such that the index matching material is in contact with at least a portion of the reflective coating. In another embodiment, the size of the interface is selected to achieve a specific field of view for the light-emitting panel” (column 10, lines 20-46).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize the electron emission layer or secondary emission

enhancement material of Green to form on the entire inner wall of the discharge tube of Matsumoto in order to obtain an increase in luminosity and radiation transport efficiency and further control and direct the emitted light in the desired direction.

Regarding to claim 3, Matsumoto discloses two common electrodes extending in a longitudinal direction of the tube, however, Matsumoto does not disclose a plurality of separate electrode that oppose to the common electrode.

Matsumoto teaches in Figure 8, "a plurality of electrode pairs are arranged on the external surface of the glass bulb 2 in the longitudinal direction thereof. In this case, even in a long lamp, the UV rays generation amount becomes uniform at any part in the longitudinal direction, and an improved luminance distribution over the entire length of the lamp can be obtained. In the fluorescent lamp 1 shown in FIGS. 1a and 1b or FIGS. 6a and 6b, of course, a plurality of electrode pairs can be arranged in the longitudinal direction of the glass bulb 2 in the same manner as described above" (column 9, lines 30-39).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize the separate electrode of Matsumoto along the opposite side of the common electrode of Matsumoto for the discharge tube of Matsumoto in order to obtain the capability of selectively generating a discharge in a plurality of parts and large light output and a stable discharge.

Response to Arguments

6. Applicant's arguments filed December 22, 2003 have been fully considered but they are not persuasive.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalei Dong whose telephone number is (571)272-2370. The examiner can normally be reached on 8 A.M. to 5 P.M..

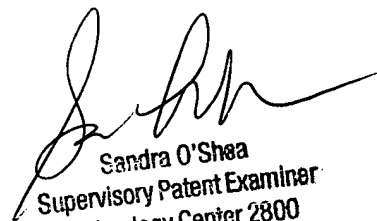
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571)272-2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

D.D.

February 12, 2004



Sandra O'Shea
Supervisory Patent Examiner
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